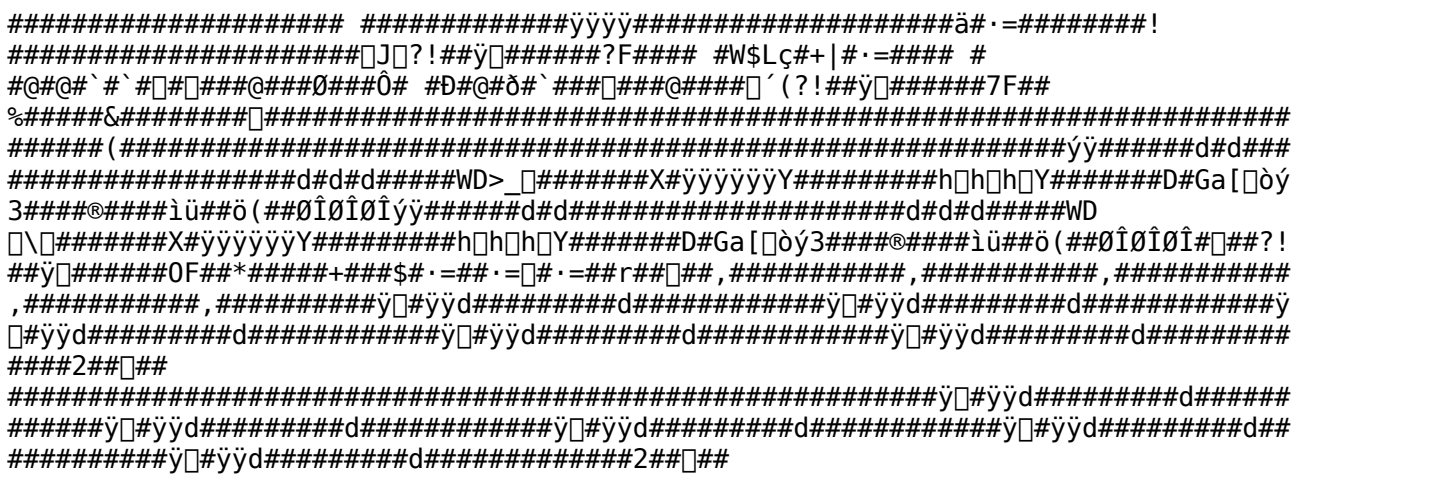

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###□#Ê#ú#□#ÿÿ####ÿÿ#####ÿ□#ÿÿd#########d#########R###This function willbe
different for eachcombination; some linear, some complex.
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÷ýû¶ ã#ÿÿ####ÿÿ####Uÿn#ÿÿK#########d#########!###The following sections contains a summary for each working group, generally containing:Mission of the groupIssues/problems to addressModels considered and/or attributes of models/tools desiredRecommendations and ConclusionsReports vary according to how each group conducted business.#

#################$##########################ÿ□#ÿÿd#########d#########2##□##¹õ□û¥□#ÿÿ####ÿÿ####Uÿn#ÿÿK#########d#########º###Task Area:Address missions definitions and task determination or analysis to include: MOE/MOP/ROEIntended objectives were to describe military objective development, and to attempt cross cutting MOE/MOP/ROE developmentMode of Operation:Scope of expertise included 7 DOD, 3 Consultants, 2 international, and 1 NGO participant.Tools and models reviewed:USSOUTHCOM Model--Deployable Exercise System (DEXES), Civil Affairs war game module. Federal Emergency Management Agency/DOD disaster relief models: □Exercise Template□ designs exercises for natural disaster preparedness, Director of Emergency Preparedness. □JFACC Planning Tools (JPT)□ strategy to task analysis, Air Staff (Checkmate).

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Ó#ÿÿ####ÿÿ####Uÿn#ÿÿK#########d#########å###OOTW Analytical Needs:Mission
Objectives: Historical mission analysis req□d:Analytical Study:Capture critical
operational mission characteristics, and interrelationships between missions and
international environment.Capture transitions between missionsBasis for
doctrinal element for OOTWProduct -- historical OOTW databaseDOD needs to
conduct research to develop taxonomy of mission objectives:  Regional
orientationSeparated by mission typeIdentifies variety of mission objectives
Political, Socio-Economic, Environmental, etc.Public Health/Human Rights
Identifies agencies and critical types of specialists required to address
planning and mission creation requirementsRequires government inter-agency and
CinC level study       #
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##########ÿ□#ÿÿd#########d############# OOTW is presently faced by a shortage of easily available, or existing information from which to capture critical information to assess historical missions, or to create OOTW mission objectives. To adequately address issues in this area, and to assess the probability of occurrence of OOTW’s there is a analytical requirement for a United States Government study. This requirement should capture critical OOTW strategic, theater and tactical operational mission characteristics and inter-relationships between the sixteen missions, and the international environment. This study will capture the participation of state and non-state actors that were involved or influenced in historical OOTW missions. This study should capture the transitions between missions, e.g., decline of state A in which a NEO operation was followed by a humanitarian assistance operation. Factors leading to the decline of a state should be evaluated to include political, socio-economic, environmental, military factors, etc., that may have contributed to this environment. Historical analysis should include examination of the doctrinal elements as stated in Joint Publication 3-07. This focus will examine the doctrinal elements to ascertain their relevancy during historical OOTW operations. Overall, two historical databases should be constructed to store the analytical data. One should be unclassified and the other classified. These data bases should also include data from civilian U.S. government agencies, NGO’s and allied countries.

################# #########################ÿ□#ÿÿd#########d#########2##□##ºõ□üF □#ÿÿ####ÿÿ####Qÿ□#ÿÿK#########d#########□###Summary RecommendationsGet clear, precise (OOTW) mission definitions -- before analysis decisions.A million □tools□ exist, but are often unrecognized or under-appreciated; e.g., a field expert; a checklist; annotated bibliographies.MOE□s and MOP□s are used ubiquitously outside DOD; National Guard, Police Forces, NGO/PVO, economists, and international multinational firms -- capture.Need a comprehensive tools □inventory□By CINC regions and OOTW Missions.Get hooks among/between.Conclusions To do: Division of labor decisions (MORS, DOD, Industry).MORS effort, possibly an analysis □tools only□ workshop/mini-symposium/roundtable (global)C

###ÿÿ#####ÿ□#ÿÿd#########d#############   A poorly or incompletely stated OOTW mission must result in poor or meaningless analysis thereof. Subject matter experts at national and CINC levels can assist in developing a coherent and actionable mission statement.   Tools abound, but are often disguised, e.g., field operational checklists, an expert civilian regional specialist, annotated bibliographies, area handbooks, etc. This presents a distorted image of OOTW analytical capabilities.   Non-DOD organizations create and use MOE/MOP and Measure of Merit (MOM) that may be very useful to adopt for military OOTW needs. They include: National Guard/Reserve units, police, U.S. federal law enforcement, NGO, PVO, economists, multinational corporations (construction, oil, manufacturing).   A comprehensive OOTW - relevant □tools inventory□ is required. Most useful tools are tailored for geographic regions, OOTW mission types or operations/task design -- or combinations of these three areas. Many probably exist, but have deceptive titles or are in the possession of unassuming owners. Once inventoried, a method/system of linking them, by mission data requirements for example, should be established. This could be as simple as a continuously updated checklist, a descriptive spreadsheet/address device, or a logic program.   #

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ã#ÿÿ####ÿÿ####Qÿ□#ÿÿK#########d#########Ç###WG Task Area:TOR: Sources and methods for estimating required forces for OOTW missionsIntended objective: outline a CinC-level modelWG Mode of OperationTools & Models ReviewedFormal Presentations- Models DiscussedCAPS, TRAC-Lvn/J-8Crisis Action Planning toolTask to force requirementsFAST-OR, CAAOOTW support force planning toolEstablish main force, calculate supporting forcesOFP, CAAObjective Force PlanningUJTL/METL based task methodologyl

###ÿÿ#####ÿ□#ÿÿd#########d#########ð###The Force Planning tools working group began by accepting the MORS Terms Of Reference charge which asked the WG to look at methods and data sources for estimating the required forces for OOTW missions. Current techniques do not lend themselves to the easy identification and translation of OOTW tasks into requirements. Planners are well versed in the translation of military tasks into military force requirements, but the special needs of OOTW are not linked explicitly to planning methods. the group agreed that if, after discussion, it was clear that there were no acceptable OOTW mission planning tools available for planners, then the WG would attempt to outline the requirements for a simple model to assist planners.   The WG was comprised of a diverse set of technical experts which contributed greatly to the quality of the final results. CinC operational staff positions were represented by several SOCOM planners, while French and British planners gave the group key international perspectives. All services were represented by analytical personnel from their staffs or FFRDC□s. And finally, the International Organizations and members of the NGO/PVO community were well represented by the International Red Cross/Red Crescent and Interaction. This happy collection of skills and viewpoints resulted in the drafting of a suggested model framework that moved the philosophy of planning OOTW missions beyond the traditional military assessment of OOTW tasks, and the obsolete paradigms of Cold War planning.

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      ã#ÿÿ####ÿÿ####Uÿn#ÿÿK#########d#############One model for all 16 missions
Group product land-oriented, needs workTechnical approach:CAPS framework, PC-
basedAccess, Excel, MS vs. C++, Visual Basic, technical evaluation required
Companion analysis methodologyBuild on FAST-OR techniques for support forces
calculationsWG 2 flow charted model design!Minimalist military force approach
User friendly; transparentInteractive w/plannerFundamental OOTW tasks missing
from J-7 UJTL - need to relook Non-traditional mission & enabling forcesFocused
on CinC
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###ÿÿ#####ÿ#ÿÿd#########d#########%###The WG was confident that one model could be made general enough to serve for all 16 missions in Joint Pub 3-07. The output of the current MORS WG was created in a very limited time and of necessity needs to be re-examined. The group admitted that the WG product at present was land-oriented, and needs work to be generalized. The best features of CAPS and FAST-OR were suggested as the basis for the technical approach. The model should utilize the CAPS framework and screen structure, and be PC-based for maximum utility. A long discussion of modeling language and approach yielded the candidate techniques of Access, Excel, MS vs. C++, Visual Basic as potential programming techniques. A true technical evaluation is required to determine the best approach, as this was beyond the skill of the WG. It was also noted that the model must possess a companion analysis methodology to guide the planner or analyst in its use, for the logic of military force planning would be imbedded in its structure and hence a roadmap would be required for use by analysis personnel. And finally, it should build on FAST-OR iterative calculation techniques for support forces calculations. Essentially, the WG recommended taking the best features of the incomplete tools at present and combining them into a useful, robust tool.þ

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÷ýû¶  ã#ÿÿ####ÿÿ####Uÿn#ÿÿK#########d#########¸###Links:Start w/mission input
(WG1)Link to C4ISR, Logistics tools (WG 5, 3)Consistent w/AMP, log toolsTool
design shortfallsGreen tint - needs Navy/Joint reviewData
availability/compatibilityResearch requiredTask to capability matchingSpecifying
unit capability (Service)Generalizing unit capability (cross Service
translations)UN/IO/NGO/PVO capability translationData acquisition problem
Translate into military arena as possible
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###ÿÿ#####ÿ□#ÿÿd#########d#########¼###The WG stated that any new model must link to the efforts of the other OOTW WG at the workshop. The proposed model would start with mission input, as all military planning does, and build on whatever techniques are selected by WG1 for use in mission definition. Any outputs or conclusions of this model would further link, ideally, to any and all C4ISR and Logistics tools as selected for use or development by WG 5 and 3. The model output would be in the form of a troop or force list, perhaps down to section, team, or individual level, as required by the mission. This force list output must be consistent with the AMP family of tools, so that a planning staff can conduct basic transportation analysis on the results. The current WG2 proposed design has some shortfalls, notably a Green (Army) tint, due to the desire to tackle the harder or more complex problem of ground support planning first. It will need a Navy or Joint review. The hardest portion of the effort, however, will be assuring unit data availability and compatibility. Only selected unit capability files exist today in JOPES, and the perception of the WG (which was limited in expertise) was that data reflecting unit capability with respect to OOTW mission accomplishment was not readily available to the force planner. This observation is more assumption on the part of the WG than confirmed fact, but it forms the basis for the comments about data availability being a potential problem.

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###############$########################ÿ□#ÿÿd#########d########2##□##ªö□üF
s#ÿÿ####ÿÿ####Qÿ□#ÿÿK########d########¾###Summary RecommendationsCombine
techniques of CAPS and FAST-OR to build modelTechnical assessment of programming
choiceResearch task to capability techniquesAppoint lead agency (J-8), establish
working group across DOD - must be Joint effortFundingData provisioningDATA for
scenario:JIC Trans worldwide trans infrastructure DBInteragency Data Bases (DOJ,
FBI, OFDA), for CD, CT, HA missionsTerrain/Country dataLook up, push button
style
```

###ÿÿ#####ÿ#ÿÿd#########d#########L###In summary, the WG recommended that the combined techniques of CAPS and FAST-OR be used to build this model. A complex model is not desired, but rather a functional, quick-running routine that links unit capability with mission task to assist the planner in task and requirement analysis. A technical assessment of programming choice must be made to select the most efficient techniques, but spreadsheet tools are recommended. Research must be conducted to match task to capability for all Joint units and use a common technique and mutually agreed data base. To start the program, it will be necessary to appoint a lead agency, and the J-8 was recommended as the most logical and best choice to manage a program targeted at the CinCs. Following that, the sponsor must establish a working group that goes across DOD to shepherd model development. This must be Joint effort in order to handle both funding and data provisioning. Unit capability data with drive force selection, and all services must agree on the data veracity. A long, complex, and expensive development effort is NOT recommended.

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÷ýû¶  ã#ÿÿ####ÿÿ####Pÿ□#ÿÿK#########d#########□###DATA for task to resourcesTask
to UIC/UTC for:UN/IO/NGO/PVO□sForeign Forces (Army, Navy, Air Forces, etc)Allied
Forces (Army, Navy, Air Forces, etc)Host nation support types/categories
Interagency - FBI, DEA, DOJ, DOSDATA to assign US military capability:ArmyNavy
            UTC Level         Air ForceUSMCCoast GuardMust allow for
Transportation Feasibility Estimate through JFAST or AMP family#
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###ÿÿ#####ÿ#ÿÿd#########d#############The data required for task-to-resources match-up is more complex. Capability descriptions for units do exist on JOPES, and they need to be examined in detail to see if they can allow for sufficient task-to-capability matricing in the circumstances of OOTW planning.   As a minimum, however, it was seen as necessary to have task to UIC/UTC level of detail for the following organizations:UN/IO/NGO/PVO’sForeign Forces (Army, Navy, Air Forces, etc)Allied Forces (Army, Navy, Air Forces, etc)Host nation support types/categoriesInteragency - FBI, DEA, DOJ, DOSThe intent of this data provisioning is so the force planner can visualize ALL the capability present in a given scenario, and thus be able to accurately judge the required US contribution. The UN/IO/NGO/PVO’s have force packages defined in a manner analogous to military units, and these elements must be included accurately in the force planning calculus.

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      c#ÿÿ####ÿÿ####Qÿ□#ÿÿK#########d#########´###WG Task Area:Initiate/track
reserve call upDetermine Deployment TimingDetermine Deployment Priorities
Determine Transport CapabilitiesEstablish LocsLogistics Planning/resupply
```

###ÿÿ#####ÿ#ÿÿd#########d#########m###These are the tasks for the working group that were taken from the terms of reference for the mors workshop. #

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      mûÿÿ####ÿÿ#####ÿ##ÿÿd#########d#########D###WG3 Summary: Logistics &
Mobility ToolsLog/Mob Analysis Process (1)
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###ÿÿ#####ÿ□#ÿÿd#########d#############This slide and the next portray examples of the process applied to sustainment and transportation functions. The group identified the inputs and processes that occur at each level of analysis, the models currently available or desired to aid in the process, and the outputs.

##########ÿ□#ÿÿd#########d#########O###The working group applied this process to the following areas: Mission   Infrastructure   Supply and services   Lift requirements and capability   Initiate/track reserve call-upAt the end of the analysis, we prioritized future efforts and recommended the appropriate method for further analysis, i.E. Government, mors study group, etc..#

###ÿÿ#####ÿ□#ÿÿd#########d#########□###   IN ORDER TO MEET THE PACOM DESIRE OF A 6 TO 8 HOUR TURN AROUND IN A □NO PLAN□ SITUATION, WE BELIEVE THAT A NEW, HIGH LEVEL MISSION ANALYSIS TOOL IS NEEDED. THE KEY TO SUCCESS OF THIS TOOL IS THE DEVELOPMENT OF A □VIRTUAL COLLABORATION□ ENVIRONMENT IN WHICH ALL PLAYERS, BOTH GOVERNMENT AND NON-GOVERNMENT ALIKE, ARE CONNECTED THROUGH A COMMON ARCHITECTURE AND GOVERNED BY A SET OF AGREED UPON STANDARDS.THROUGH THE APPLICATION OF BASIC AI TECHNIQUES, CAPTURING DATA FROM PREVIOUS OOTW□S AND STORING THAT DATA IN A FORMAT THAT FACILITATES FUTURE USE IS AN IMPORTANT ASPECT OF QUICKLY DETERMINING AN OOTW CONOPS.   WE BELIEVE THAT SOME OF THE DATA REPOSITORIES IDENTIFIED ALREADY EXIST IN SOME FASHION, WITH THE GREATEST CHALLENGE BEING MAKING THE DATA EASILY ACCESSABLE.   DESIRED OUTPUTS FROM THE SYSTEM INCLUDE A □ROUGH ORDER OF MAGNITUDE□ OF THE PERSONNEL, UNITS AND EQUIPMENT, AND SUPPLY TONNAGE NEEDED FOR THE OOTW WHICH WOULD PERMIT MODELING THE DEPLOYMENT AND SUSTAINMENT REQUIREMENTS IN EXISTING MODELS.   THE CONOPS GENERATED WOULD ONLY BE A □SHELL□ TO FACILITATE FURTHER PLANNING AND WOULD EVENTUALLY DEVELOP INTO A COMPLETE DOCUMENT AS PLANNING MATURES.#

###ÿÿ#####ÿ□#ÿÿd#########d############Mission was seen as the foundation for all other analysis in logistics and mobility. It is essential that from the national perspective, a good comprehensive mission statement is provided. The logistics professionals need a short statement up front that depicts the ootw missions to be supported, the participants/actors , the weather and terrain, threat levels, population size , the size and scope of the ongoing pvo/ngo/io operations in the area. From this brief mission statement, an initial logistics estimate can be made, using a model not yet developed but perhaps similar in design to caps which we call caps (++) . We believe it could help provide a quick logistics force structure estimate useable in initial total force package number estimates. This is also valuable at the cinc and operational level so that there is at least a point of common reference for establishing a refined logistics concept of operations from which all other logistics analysis will flow.Most of the data for this model must be included in the decision to pursue a course of action. Though not specified; state, cia, dia, unhcr, unwfp, unicef, and others should have some form of hard copy data or a data base that could aid in the evaluation of weather, terrain, intel, individuals at risk, and current pvo/ngo/io ops.Recommendation: that development of this model, as our number one priority, should be designed and developed as a government project.#

###ÿÿ#####ÿ□#ÿÿd#########d#########ò###At all levels of planning and execution, good infrastructure data is required because it affects all of the calculations that the logistician must perform. This data input has special attributes: the capability and capacity of the resources most likely to be available, the current condition of the resources, and the period during which it should be viable under different stress levels before it needs to be repaired. These attributes, together with the data itself, should be maintained and kept current in a common structured database. Some of the inputs are known to be available in unspecified databases at dia, cia, disa, dma, ustranscom, and the un. There are also commercial databases such as □fairplay□ and □lloyds of london□ that maintain much of the best info on commercial infrastructure capabilities.With this data, the logistician must do throughput capacity calculations and make judgments as to how much can be delivered in the timeframes anticipated and what the impact of operations on the country infrastructure will be. There are many known models that can aid in this process. None is complete or whole by itself. Once these models are employed, the logistician can determine a better concept of ops that will impact force structure and the cost, timing/duration, and phasing of operational and logistical deliveries.Recommendation: that a study group to sort out the actual computational requirements, models and their shortcomings be established. This is our number two priority.

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ú□ÿô#r   ##   ##########ÿ□#ÿÿd#########d#########þ###SUPPLY AND SERVICES IS A KEY ELEMENT IN LOGISTICS PLANNING AND EXECUTION AND FOLLOWS DIRECTLY FROM AN ANALYSIS OF MISSION AND INFRASTRUCTURE. IT FOLLOWS THAT THIS IS OUR THIRD PRIORITY FOR DEVELOPMENT EFFORT. BY SUPPLY AND SERVICES, WE MEAN THE LOGISTICS CORE COMPETENCIES SUCH AS SUPPLY, MAINTENANCE AND REPAIR, CONTRACTING, LOGISTICS INFORMATION SYSTEMS, AND OTHER LESS TRADITIONAL SUPPORT, SUCH AS AAFES.FROM THE MISSION AND INFRASTRUCTURE MODULES, WE HAVE ALREADY DERIVED A LOGISTICS CONCEPT OF OPS THAT INCLUDES TIMING, SIZE OF FORCE/POPULATION SUPPORTED, AND WHAT IT MIGHT TAKE TO MAINTAIN THE INFRASTRUCTURE ESSENTIAL TO LOGISTICS SUPPORT. NOW USING CONSUMPTION DATA (SERVICE DATA BASES, USAID, AND STATE□S BUREAU OF POPULATION, REFUGEES, AND MIGRATION AS WELL AS ADDITIONAL NGO/PVO/IO PLANNING FACTORS) THE LOGISTICIAN MUST MAKE A MULTITUDE OF CALCULATIONS TO DETERMINE THE QUANTITY OF EACH CLASS/TYPE OF SUPPLY AND SERVICE THAT MUST BE AVAILABLE IN THE OPERATION. THERE ARE MANY MODELS CURRENTLY IN USE BY DIFFERENT TYPES OF ORGANIZATIONS, SOME ARE LISTED HERE, THAT CAN PROVIDE AN AUTOMATED AND COORDINATED SET OF TOOLS TO ASSIST IN PERFORMING THIS WORK. THE RESULTS ARE THE DETAILED CONOPS, THAT AGAIN MAY INFLUENCE THE SIZE OF THE FORCE STRUCTURE. NORMALLY THE OUTPUT IS A REQUIREMENTS LIST IN THE FORM OF PEOPLE AND TONS OVER TIME THAT WILL ALSO IMPACT CONTRACTING. ALL OF THIS DATA MUST BE CAPTURED IN A LOGISTICS INFORMATION SYSTEM THAT WILL BE USED BY MANY DIFFERENT LEVELS TO TRACK THE SUPPORT STATUS. ANOTHER IMPORTANT OUTPUT OF THIS ACTIVITY IS THE TASKING AND SOURCING OF THE ACTIVITIES TO ACTUALLY PROVIDE THESE SUPPLIES AND SERVICES.

RECOMMENDATION: IT WAS BEYOND THE SCOPE AND TIME AVAILABLE TO PURSUE ANALYSIS OF THIS ACTIVITY. A STUDY GROUP OR GOVERNMENT PROJECT COULD SORT THIS OUT. WE BELIEVE THAT THE JLSC/DLA/TRADOC/AND ACOM HAVE A ROLE TO PLAY IN THIS PROCESS. ALTHOUGH MUCH EFFORT MAY HAVE ALREADY BEEN PUT FORTH, WE ARE NOT AWARE OF THE LEVEL OF PROGRESS. THIS IS OUR THIRD PRIORITY OF EFFORT.

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#####ÿ##ÿÿd#########d#########*###(Capability) Ports (air & sea), roads, rail, pipelinecapability, availability, restrictions Lift assets (ships, A/C, trucks, etc.)number, type (apportionment),characteristics, location, availability, enroute support (basing) Alternatives (ability to rank)contracting, routing, mode mix, etc.

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ú##ÿÿ####ÿÿ#####ÿ##ÿÿd#########d#########N###(General) NEO (special
consideration) Current INTEL ITV (LOG info tracking)
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#x#ÿÿ####ÿÿ#####ÿ##ÿÿd########d#########Ê### Deployment estimate (timeline) duration Closure profile (PAX, CGO) Manifest data (PAX, CGO)WPS, GDSS, CAPS Data analysiseffectiveness analysis Retrograde capability MEDEVAC capability COA input

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#2#ÿÿ####ÿÿ#####ÿ##ÿÿd#########d#########□### JFAST ELIST MIDAS SUMMITS BRACE /
ACE (APOE) PORTSIM (SPOE/D) THRUPUT (USAF) CONOPS (USAF) AIRFLOW LOG ANCHOR DESK
KBLPS, JTAV, GTN, ITV LOGGEN
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      Óúÿÿ####ÿÿ#####ÿ□#ÿÿd#########d#########J#### WG3 Summary: Logistics &
Mobility Tools Lift Requirements and Capability
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###ÿÿ#####ÿ□#ÿÿd#########d#########º### IN THIS ILLUSTRATION, WE MAKE THE ASSUMPTION THAT THE FORMAT AND CONSTRUCT OF THE TIME PHASED FORCE DEPLOYMENT DATA (TPFDD) WILL CONTINUE TO BE THE METHOD BY WHICH MOVEMENT REQUIREMENTS ARE DEFINED AND COMMUNICATED. IT IS EXPECTED THAT THE USE OF THE □TPFDD□ WILL CONTINUE TO PRESENT PROBLEMS FOR ALLIES, COALITION PARTNERS, NGO/ PVO/IO WHO ARE NOT FAMILIAR WITH THE □TPFDD□ PROCESS AND WHO COMMUNICATE THEIR MOVEMENT REQUIREMENTS IN A DIFFERENT MANNER. THEREFORE, A TOOL IS NEEDED TO STANDARDIZE THE IDENTIFICATION OF THE MOVEMENT REQUIREMENTS OF THESE ORGANIZATIONS WHEN THE U.S. MILITARY COORDINATES THE LIFT. BECAUSE THE □TPFDD□ PROVIDES THE BASIC INPUT TO SOME OF THE MOBILITY MODELS LISTED HERE, IT IS ESSENTIAL THAT THE MOVEMENT DATA BE TIMELY AND ACCURATE FOR THE OUTPUTS TO BE OF ANY VALUE. OTHER THAN A REQUIREMENT TO COMPRESS THE TIME REQUIRED TO COMPLETE THE ANALYSIS USING THIS SUITE OF MODELS, THE PROCESS IS THE SAME FOR AN MRC AS IT IS FOR AN OOTW. THIS IS OUR FOURTH PRIORITY.RECOMMENDATION: THAT A STUDY GROUP, IN COORDINATION WITH ONGOING STANDARDIZATION EFFORTS BE FORMED TO EVALUATE EXISTING MODELS AND ASSIST IN A DETERMINATION OF AN APPROPRIATE MEANS TO PROVIDE THIS CAPABILITY.

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d#########Ô###Inputs Determination of force requirementscapability in Reserves /
NG Visibility of Service Requirements assist w/Presidential Call-up decision
Services and USACOM source Data from Service personnel systems
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      ############################ÿ□#ÿÿd#########d#########r##□##Jö½ùn
      Çúÿÿ####ÿÿ#####ÿ□#ÿÿd#########d#########I###WG3 Summary: Logistics &
Mobility Tools #Initiate / Track Reserve Call-upR
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##########ÿ#ÿÿd#########d############# IT IS NOT OUR INTENT TO RECOMMEND THE DEVELOPMENT OF A NEW SYSTEM TO INITIATE AND TRACK RESERVE AND NATIONAL GUARD CALL-UP. WE RECOGNIZE THAT THE RESPONSIBILITY FOR THESE ACTIONS RESTS WITH THE SERVICES AND USACOM. WE DO PROPOSE THAT VISIBILITY INTO THE EXISTING SERVICE AND USACOM SYSTEMS BE PROVIDED AS A JOINT VIEW FOR THE USE OF THE OOTW PLANNER. THE SERVICES EACH HAVE THEIR OWN MODELS FOR HANDLING RESERVE AND NG CALL-UP AND TRACKING. BECAUSE OF THE LIKELIHOOD OF CONTINUED RELIANCE ON THE RESERVES AND NG TO PROVIDE SUPPORT TO OOTWs, USING DATA FROM EXISTING SYSTEMS, IS REASONABLE. WE SEE THE PRIMARY OUTPUT FROM THE JOINT VIEW AS BEING VARIOUS REPORTS THAT WOULD BE SHARED THROUGHOUT THE COMMUNITY. THIS IS OUR FIFTH PRIORITY.RECOMMENDATION: THAT A STUDY GROUP BE FORMED TO INVESTIGATE THE FEASIBILITY OF CAPTURING COMMON DATA ON THE RESERVE COMPONENT SELECTION AND MOBILIZATION PROCESS.

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######ÿ□#ÿÿd#########d#########3##□##Ìö#ü□
      Q#ÿÿ####ÿÿ#####ÿ##ÿÿd#########d#########È###What we did  Examined &
Prioritized Task Areas How we did itGroup Expertise & Discussion What remains to
be doneStudy Groups/Projects to Investigate and Refine ModelsNot Ready for Prime
Time RFP
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###ÿÿ#####ÿ□#ÿÿd#########d#########-###THE STUDY GROUP EXAMINED AND PRIORITIZED THE TASK AREAS IN LOGISTICS AND MOBILITY PLANNING AND EXECUTION. INPUTS, PROCESSES, MODELS, AND OUTPUTS WERE DETERMINED FOR EACH OF THE AREAS. RECOMMENDATIONS WERE DEVELOPED FOR FURTHER ACTION BY APPROPRIATE ACTIVITIES TO INVESTIGATE AND REFINE THE MODELS AND CAPABILITIES REQUIRED TO IMPROVE LOGISTICS AND MOBILITY PLANNING AND EXECUTION.ADDITIONAL WORK NEEDS TO BE DONE TO REFINE THE REQUIREMENTS BEFORE ANY ATTEMPT TO ESTABLISH A DEVELOPMENTAL CONTRACT FOR LOGISTICS AND MOBILITY MODELS SPECIFICALLY FOR OOTW.#

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S#ÿÿ####ÿÿ####Qÿ□#ÿÿK#########d#########□###Workgroup□s Task Areas:    COA
Development and Risk Assessment     COA Analysis / Evaluation / Comparison  /
Selection   COA Situational AwarenessTools/TechniquesConceptual Model for OOTW
COA Development & AnalysisSurvey of Available ToolsWorkgroup□s Major Activities
Reviewed METT-T and mission categories for OOTW.Developed conceptual model for
COA development and analysis.Identified core Object Domain Attributes (ODAs)
within conceptual model for COA development.Identified a core set of Governing
Factors for COA analysis. Conducted crosswalk of ODAs against selected types of
missions in OOTW. Conducted a mapping of  ODAs onto set of core governing
factors.ÿ
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###ÿÿ#####ÿ#ÿÿd#########d#########p###WG4s focus was on COA development and analysisComposition of workgroup #4 at the MORS Jan 97 Workshop on OOTW:Mr. Kevin Brandt (Chair), MITRE/JWFC, brandtk@mitre.orgMr. Crawford, OASD/SOLIC, solicrp@policy1.policy.osd.milLt Col (FR) Delamarre, EMAT/CROSAT (FR), delamarr@uranus.crosat.fr [until June 97]Mr. Elton, JTASC/ACOM, elton@acom.mil Mr. Tim Fitzpatrick, USAJFKWCS   Mr. Nelson Jennings, JWAC, njenning@jwac.comCOL Maher, USAFSOS, maherb@hqafsoc.hurlburt.af.milMr. Jack Morrison, LANL, morrison@snark.lanl.govCPT Nilsson, NPGS, via Wayne Hughes at whughes@wpomtp.nps.navy.milMr. Visser, OSD PA&E, visserj@paesmtp.pae.osd.milMiss Linda Weber (Co-Chair), MITRE/JWFC, weberl@jwfc.army.milLTC Wiles, HQ USSOCOM,   LCDR Cares (Executive WG)LTC Marriott (Data WG)Will detail activities, procedures, findings, recommendations & conclusions on following charts.

###ÿÿ#####ÿ□#ÿÿd#########d#########´###This the model presents a process used to perform COA development and analysis in OOTW. The procedure is sufficiently generic so that it can encompass all OOTW missions - however, the physical tools developed in hardware / software to implement this model may not be able to capture the needed □transfer□ functions for all mission types. Hence, multiple tools and data sets may be needed.Within this model, objectives, tasks, and considerations for each OOTW mission map to a set of object domain attributes (ODAs) (this set would not be the same for all missions even though the task may be similar). These ODAs provide the basis for a tool that would be used to develop courses of action.The object domain attributes feed an internal transfer function to produce data values that can be measured to establish the relative □goodness□ of each COA against a set of core governing factors (CGF). (Proposed set of □core□ governing factors may provide an 80% solution for most mission sets in OOTW ... but the military analyst would need to establish the actual governing factors for each mission / region and (using the tool) select the correct internal transfer function for the specific mission set be evaluated. Note: the ODA to CGF transfer function could be significantly different for different types of missions and for different regions of the world. (For example, mappings from ODA into elements of cost would differ across regions within the same Theater of Operations). Tool should aid the analyst in selecting the correct transfer function. For some ODAs the transfer function may be linear, for others it will be complex and/or multivariate. Selected measures of effectiveness that capture critical data that reflect the essence of these core governing factors would be used as input data for a decision maker.A multiple attribute / multiple objective decision support tool would be used to assist the decision maker in selecting a preferred COA.

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      òúÿÿ####ÿÿ#####ÿ□#ÿÿd#########d#########M###WG4 Summary: COA Development &
Analysis #Object Domains for Conceptual Model
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#ÿÿ####ÿÿ####Uÿn#ÿÿK#########d#########□###MissionActors and Capabilities
Synchronization and Sequencing Physical Environment Geopolitical,
Informational, and Economic Factors

###ÿÿ#####ÿ□#ÿÿd#########d#########~###MASS PEGIE ? (may need to rework the list to find a better □NAME□)Regardless of the NOUNS selected, the concept is valid: KEY WORDS (NOUNS) are the name of OBJECTs with DOMAIN characteristics that encompass key planning factors for OOTW.Characteristics of these objects are detailed by their DOMAIN ATTRIBUTES. These attributes provide planners the information and factors they need to consider during COA development and analysis (akin to what is done with the METT-T in standard military operations.) The DOMAIN ATTRIBUTES associated with these OBJECTs - herein called □object domain attributes□ or ODAs - provide the checklist for COA development and feed the model for COA analysis and selection tools.A □starter set□ of these ODA are detailed in the following charts. The ODA listing is intended to be comprehensive, but not exhaustive. Research is needed to extend these lists.

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      Ýúÿÿ####ÿÿ#####ÿ□#ÿÿd#########d#########L###WG4 Summary: COA Development &
Analysis #Object Domain:  Mission Attributes
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      Ã#ÿÿ####ÿÿ####Pÿ#ÿÿK#########d#########ß###Meet Mission Requirements /
Degree of Success:Ensure mission is viable and success is feasibleAssess risk to
strategy of mission success or failureIdentify end state / exit point /
redeployment / transition strategyFoster Cooperation Among Key Actors:  national
forces; coalition forces; NGOs; PVOs; OGAs ... .Support Long-Range Strategy
(commanders intent):national, regional, theater, and/or country (country team)
Work within Established Constraints:Scope of conflict:  rules of engagement,
legal, level of intensity... Employment constraints:  coalition forces, NGOs,
PVOs ... Acceptable risk to the force - casualty thresholds Achieve Cost -
Benefit Threshold CriteriaPolitical costs; Economic costs; Ecological costsc
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###ÿÿ#####ÿ□#ÿÿd#########d#########Ê###Redeployment / Transition should consider:Residual forces Other missions faced by employed units Reconstitution of forcesTraining/ExercisesC4 aspect / Integrated transition planning / Support for future operationsFlexibilityDemobilization/Disarming issues - reduce threat of trained armed personnel by transition into local police, etc.Restoration of terrain/area - includes de-mining operationsReconstruction Informational/psychological operations

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      c#ÿÿ####ÿÿ####Pÿ□#ÿÿK#########d#########×###Identify Issues and Interest
for All Actors:        Perceptions, Attitudes, and ValuesMotivation for direct
or indirect action or inaction -> behaviorSpheres of interest for cooperation
and competitionPotential for development of actor coalitionsStatus and attitudes
of key communicators and leadershipDetermine Level of Reliability and Resolve
Cooperation within spheres of interests and/or actor coalitionsPhysical and
moral supportDetermine Impact of Potential Actions on All Actors:      Direct
actors, indirect actors, unengaged actors, bystandersIdentify Potential
Belligerents & Threats:      Standing military and paramilitary forces,
organized groups, mass demonstrations and strikes, economic actions,
resistance ... g
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###ÿÿ#####ÿ#ÿÿd#########d#############Identify Issues and Interest for All Actors: ACTORS INCLUDE: Organized Military and Paramilitary Forces, Governmental and Quasi-governmental Agencies, Media, NGO, PVO, Other USG Agencies, Professional Organizations, Educational Institutions, Civic-Ethnic-Religious Groups, Key Communicators, Multinational Corporations, Commercial Sector ... Selected the inclusive term Actors to encompass all interested and disinterested parties across the entire WORLD STAGE.Perceptions, Attitudes, and ValuesMotivation for direct or indirect action or inaction -> behavior Spheres of interest for cooperation and competitionPotential for development of actor coalitionsStatus, attitudes, and location of key facilities, key communicators, and leadershipDetermine Level of Reliability and Resolve Cooperation within spheres of interests and/or actor coalitionsPhysical and moral supportDetermine Impact of Potential Actions on All Actors: Direct actors, indirect actors, unengaged actors, bystandersIdentify Potential Belligerents & Threats: Standing military and paramilitary forces, organized groups, mass demonstrations and strikes, economic actions, resistance ...

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#ÿÿ####ÿÿ####Qÿ□#ÿÿK#########d#############Identify Physical Capabilities: includes military, governmental, educational, commercial, informational, moral ... resources ... to accomplish mission tasks (organization, transportation, education, communication ... .)Leverage Force Structure, Command, and Control includes internal structure and external links for governmental agencies, national and regional organizations, international organizations, civic and educational organizations, regular (i.e. Active) military, reserve forces, paramilitary units, police forces ... Optimize Force and Agency Economics: includes force structure costs, funding sources, legal / contracting constraints, responsiveness ... Determine force size and ratio requirementsWork tradeoffs for the mix of government-military-NGO-contractor support assets

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##ÿÿ####ÿÿ####Qÿ□#ÿÿK#########d#########z###Maximize Interoperability with Other Actors physical and procedural links - social and political considerations -bridge technology gapsProvide Force Protection - Minimize VulnerabilitiesConsider Resource Requirements vs. Assets AvailableOM Funds - Reimbursability issuesAvailable Supplies & Logistical Support Accommodate Fiscal Responsibility SharingMaintain Force ReadinessMaintain residual readiness for (military) contingency operationsAlign OOTW mission tasks with contingency mission trainingHusband critical resources for contingency operationsManage OPTEMPO, PERTEMPO, usage rates -> plan unit and mission rotations

###ÿÿ#####ÿ□#ÿÿd#########d#########Ã###Maximize Interoperability with Other ActorsIdentify and exploit physical and procedural linksReflect social and political considerationsBridge technology gapsProvide Force Protection - Minimize VulnerabilitiesConsider Resource Requirements versus Assets AvailableOM Funds - Reimbursability issuesAvailable Supplies & Logistical Support Accommodate Fiscal Responsibility SharingMaintain Force Readiness   (need to define standing readiness for OOTW)Maintain residual readiness for (military) contingency operationsAlign OOTW mission tasks with contingency mission training Husband critical resource for contingency operationsManage OPTEMPO, PERTEMPO, usage rates -> plan unit and mission rotationsa

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#ÿÿ####ÿÿ####Pÿ□#ÿÿK#########d#########"###Consider Impact of Logistical
Support: Maintain accountability - avoid leakage or diversion of suppliesAlign
with long-term strategic objectives:  access, presence, obligations ... .Control
adverse economic impacts -> inflationEnsure Adequate Logistics for Critical
ItemsPlan surge and sustainment levelsLeverage non-military structures ->
contractor and third party sourcesDevelop Movement Factors for All Actors
      Includes traditional load plans and other configurations for movement of
own forces or other actors on available resources.
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###ÿÿ#####ÿ□#ÿÿd#########d#############Consider Impact of Logistical Support: Includes direct and indirect effects on local and regional economies, political systems, national / regional development, infrastructure development, non-traditional markets ... .Maintain accountability - avoid leakage or diversion of suppliesAlign with long-term strategic objectives: access, presence, obligations ... .Control adverse economic impacts -> inflationEnsure Adequate Logistics for Critical Items Includes supplies, transportation resources, storage capacity, refrigeration, medical facilities, and supplies ... .Plan surge and sustainment levelsLeverage non-military structures -> contractor and third party sourcesPlan Movement Factors for All Actors Includes traditional load plans and non-traditional configurations for movement of own forces or other actors on available resources. Consider special needs for □at-risk□ cases: near-term expectant mothers, infirm, small infants) and high-profile cases (government officials, key communicators, criminals)#

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###Pÿ□#ÿÿK#########d#########□###Manage Timing of Operations and ActionsConsider
physical, political, and social calendars & daily schedulesManage timing to
enhance availability of critical resources and enhance the support other actors
will provide to your actions.When missions are time-critical, provide needed
responsiveness.Time actions to improve cost-benefit ratios, meet constraints,
and mitigate risks.Synchronize Operations - Seek Unity of EffortUse C4ISR
systems and liaison teams to mesh actions with complimentary efforts by other
actors -> unity of effort.Align operations with other missions, tasks,
objectives, & strategies       conduct integrated planning.Exploit transient or
emerging opportunities - retain flexibility.Consider Mission DurationConsider
planning and execution time available, physical and political deadlines, and the
expected time scale (for many OOTW missions duration may be months vs.
minutes/hours)#
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#ÿÿ####ÿÿ####Qÿ□#ÿÿK#########d#########s###Use infrastructure within the Area of Operations: Leverage LOCs, transportation assets, resourcesDetermine strategic, operational, and tactical movement factors for all actors into and within AO Secure basing and overflight rights - access for other actorsAdapt to the topology :Identify military aspects of terrain [observation, cover and concealment, obstacles, key terrain, avenues of approach]Consider physical size and location of area of operations and staging areas - distance to logistical sites, supportability, flexibility, C4ISR connectivity (inter and intra regional)Identify impact of NBC hazards - determine ecological impactsDetermine availability of MCGI products and production dataPlan for expected climatology and potential weatherAlign force and actor locations with mission requirements and constraints (i.e. restricted areas, zones of influence ... .)#

###ÿÿ#####ÿ□#ÿÿd#########d#########□###Area of Operations:Movement into the Area - How tough is it to get there? Can we get the resources there? Modes of Transportation - What is best to get there?Basing - Basing rights/overflight rightsInfrastructure - Available infrastructure? Or do you have to bring resources to that area?Size of Area - Size of operating area/demographics Tactical Military Aspects of Terrain (OCOKA)Observation Cover/concealment ObstaclesKey TerrainAvenues of ApproachClimatology/Weather -Nuclear, Biological, Chemical Aspects -Health and Safety Issues -Infrastructure/Resources -LOC Capacity/Efficiency of Operations - How fast can I get stuff there?

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#ÿÿ####ÿÿ####Qÿ□#ÿÿK#########d#########s###Use infrastructure within the Area of
Operations:  Leverage LOCs, transportation assets, resourcesDetermine strategic,
operational, and tactical movement factors for all actors into and within AO
Secure basing and overflight rights - access for other actorsAdapt to the
topology :Identify military aspects of terrain [observation, cover and
concealment, obstacles, key terrain, avenues of approach]Consider physical size
and location of area of operations and staging areas - distance to logistical
sites, supportability, flexibility, C4ISR connectivity (inter and intra
regional)Identify impact of NBC hazards - determine ecological impactsDetermine
availability of MCGI products and production dataPlan for expected climatology
and potential weatherAlign force and actor locations with mission requirements
and constraints (i.e. restricted areas, zones of influence ... .)#
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###ÿÿ#####ÿ□#ÿÿd#########d#########Æ###Other issues to be considered include: C4ISR connectivity (inter and intra regional)Security Legal aspects - Locations of other players -Interoperability with other players - culturally and technology-wiseEthnic/cultural aspects -Supports the Mission - Ease in Getting Out -Strategic Interests -Response Time from CONUS-based ResourcesTime for Potential Other Enemy to Impact Operations (different MRC) -Flexibility - Intermediate Staging Base vs. Direct - Supportability -LOC -Cultural -Ecological / Parks concerns - Responsibility/liability with respect to terrain in laws of land warfare - *very unique in OOTWRestricted areas -Mobility/trafficability - MCGI (Mapping, Charting, Geodesy, Imagery) Coverage -Political Costs/Benefits - Political issues with using a specific location.Economic Costs/Benefits - What is your cost to get there? What is cost of sustaining operations? The others are sub-attributes which affect the costs of this.

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□ûÿÿ####ÿÿ#####ÿ□#ÿÿd#########d#########a###WG4 Summary: COA Development &
Analysis #Object Domain:  Geopolitical, Informational, & Economico
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#ÿÿ####ÿÿ####Qÿ□#ÿÿK#########d#########□###Assess impact of diverse cultures and
religionsConsider political impact of actions Adhere to operational constraints:
Determine long-term and second-order effects (economic and political)Control
economic impact (positive and negative) on non-military centers of gravity
Leverage information operations (public affairs, PSYOP, information
warfare ...)Gain support from other countries#

###ÿÿ#####ÿ□#ÿÿd#########d#########,###Assess impact of diverse cultures and religions:Review friendly, neutral, and hostile ethnic groups Understand and leverage cultural valuesConsider political impact of actions: Actions balanced or unbalanced and in favor of selected actorsImpact on perceived legitimacy of local governmentAssess potential impact on perceived legitimacy of own actions -> domestic and international supportAdhere to operational constraints:Status of forces agreements and host nation supportRules of engagement (ROE) constraints vs. force protection Determine long-term and second-order effects (economic and political)Control economic impact (positive and negative) on non-military centers of gravityLeverage information operations (public affairs, PSYOP, information warfare ...)Gain support from other countries

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#ÿÿ####ÿÿ####Qÿ□#ÿÿK#########d#########6###    This example demonstrates
mapping from location (object domain) attributes to core governing factors
Movement to/from Area ->  Sustainability, Security, Unity of Effort, Objective,
Economy of Effort, FlexibilityModes of Transportation -> Sustainability,
Security, Unity of Effort, Objective, Economy of Effort, FlexibilityBasing ->
Sustainability, Security, Unity of Effort, Objective, Economy of Effort,
Flexibility, LegitimacyInfrastructure -> Sustainability, Security, Unity of
Effort, Objective, Economy of Effort, FlexibilitySize of Area -> Sustainability,
Security, Unity of Effort, Objective, Economy of Effort, FlexibilityPolitical
Costs/Benefits -> Legitimacy, Perseverance, Objective, RestraintEconomic
Costs/Benefits -> Sustainability, Security, Unity of Effort, Objective, Economy
of Effort, Flexibility
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□#ÿÿ####ÿÿ####Uÿn#ÿÿK#########d#########Ó###Reviewed Existing Tools Many tools available including: CATS, COAST; ACAAM; CAM; TARGET; RDSS; TPedit; SIAM; JTS; SWARM; SpectrumResearch to date has focused on tools developed by and for military No exhaustive list of all potential toolsNeed to explore non-military, commercial, and NGO toolsAvailable tool sets do not satisfy all requirementsNeed an adaptive tool set or multiple tools sets for COA development and analysis across the range of OOTW missionsu

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###ÿÿ#####ÿ□#ÿÿd#########d#########½###Potential OOTW COA Development and/or
Assessment with a number of developed tools:  CATS - Consequence Assessment Tool
Set - uses ArcInfo, good tool,COAST - Course of Action Selection Tool. A
pairwise comparison of linear criteria for COA  eval.ACAAM - Air courses of
action assessment.  Air combat, not OOTW limit use to planning for strikes and
raids. Use of CTAPS more pervasive.CAM - Civil Affairs Model (part of DEXES).
TARGET - Theater Analysis and Replanning Graphical Execution Toolkit.
Environment to aid in plan development - now called Advanced Joint PlanningRDSS
- a lot like SpectrumTPedit - to build a TPFFDSIAM - situational influence
assessment model - SAIC developed for Intel, JWAC is looking to use it for
OOTW...there is a study in progress.JTS - Joint Tactical Simulation -  an entity
level combat model of joint operations. Application to a limited range of OOTW
mission areas.SWARM - multiple objective functions...used in artificial life
models, artificial actors...complex systems research...simulation environment
for modeling large complex models.Need to research other tools: (for example)
Transportation Models and SimulationsApplication  of COTS wargames and
simulations (i.e. SIM CITY) need to be investigated.Explore tools used by non-
military organizations (i.e. CDC, FEMA ... .)Identify and/or develop decision
analysis tools and databasesIncorporate COTS and GOTS geographic information
systems (GIS)Use the web (WWW)n
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      ##ÿÿ####ÿÿ####Uÿn#ÿÿK#########d#############Improve OOTW Object Domain
Attribute (ODA) concept:  expand list of ODAs, define all terms, determine
information requirements and sources, matrix ODAs to OOTW missionsDefine &
validate OOTW Core Governing Factors (CGF) and units of measureDevelop ODA to
CGF transition function matrixIdentify non-linear, multiple attribute / multiple
objective decision support tools/techniques to aid decision maker□s selection of
a preferred COA.Evaluate and validate the means versus the effects projected
when using the planning tools#
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###ÿÿ#####ÿ□#ÿÿd#########d#########®###1. Attributes fully defined and Matrixed a) Expand attribute list (using indicator lists from the military is a good start) [OOTW experts research presented to a WG]b) Description/Definitions of Attributes [OOTW experts research presented to WG]c) Determine and find the information/measurements needs (data elements) to feed the attributes [OOTW experts research presented to WG]d) Attributes matrixed to missions [provide strawman to a WG to do]2. Governing Factors fully defined and matrixeda) Definitions of Governing Factors [personal task - develop strawman and talk with JWFC Doctrine developers]b) Validate governing factors [CINC/JTF/IGO planners to do at a conference]

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each#□#######!###combination; some »#######!###linear, some complex.
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